

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A method of producing a hot rolled steel sheet having a yield strength measured in a transverse direction of less than about 43 ksi, from molten steel, said sheet having increased formability and low slivering, the method comprising the steps of:
 - a) measuring the total nitrogen concentration of the molten steel;
 - b) adding a sufficient amount of Titanium to the molten steel to bind with a first portion of the total nitrogen to form TiN, thereby leaving a second portion of total nitrogen;
 - c) adding a sufficient amount of Boron to the molten steel to bind with the second portion of the total nitrogen to form BN; and,
 - d) hot rolling the steel.
2. The method of claim 1 wherein the amount of Ti added is sufficient to reduce the amount of the second portion of total nitrogen to a concentration within the range of:
$$0.0005 \text{ wt\%} \leq N^* \leq 0.0025 \text{ wt\%}$$
where:
$$N^* \text{ is the second portion of total nitrogen and wherein:}$$
$$N^* = N_{\text{tot}} - (\text{Ti}/3.42);$$
$$N_{\text{tot}} \text{ is the total nitrogen as measured in wt\%; and,}$$
$$\text{Ti is the amount of Titanium added in wt\%.}$$
3. The method of claim 2 wherein the amount of N^* is about 0.0012 wt% to about 0.0022 wt%.
4. The method of claim 3 wherein the amount of Boron added to the molten steel is about 0.0005 wt% to about 0.0025 wt%.
5. The method of claim 4 wherein the amount of Boron added to the molten steel is about 0.001 wt% to about 0.002 wt%.

6. A hot rolled steel sheet made according to the method of claim 1.
7. A hot rolled steel sheet made according to the method of claim 4.
8. A hot rolled steel sheet made according to the method of claim 5
9. A steel tube made from the hot rolled steel sheet formed according to the method of claim 1.
10. A steel tube made from the hot rolled steel sheet formed according to the method of claim 4
11. A steel tube made from the hot rolled steel sheet formed according to the method of claim 5.
12. A method of producing a low yield strength hot rolled steel sheet having a yield strength measured in a transverse direction of less than about 43 ksi, from molten steel, said steel sheet having increased formability and low slivering, the method comprising the steps of:
 - a) measuring the total nitrogen concentration of the molten steel;
 - b) adding sufficient amounts of Titanium and Boron to the molten steel in a proportion wherein the range of a stabilization ratio, SR corresponding to the relationship:

$$(B/0.77 + Ti/3.42)/N_{tot}$$

is

$$0.7 \leq SR \leq 2$$

where:

N_{tot} is the total nitrogen as measured in wt%

and the range of the Boron bound to nitrogen remaining after Ti addition, $B \times N^*$ is

$$0 \text{ wt}\%^2 < B \times N^* \leq 4.5 \times 10^{-6} \text{ wt}\%^2;$$

where:

$$N^* = N_{tot} - (Ti/3.42); \text{ and}$$

- c) hot rolling the steel.